

**Notice of Allowability**

Application No.

09/872,276

Examiner

Dung X Nguyen

Applicant(s)

KIM ET AL.

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on 04 June 2001.
2. ☒ The allowed claim(s) is/are 1 - 9.
3. ☒ The drawings filed on 31 May 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|   | 9. <input type="checkbox"/> Other _____   |

***EXAMINER'S AMENDMENT***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with E. Russell Tarleton on September 30, 2004.

***IN THE CLAIMS:***

In claim 1, the recitation of "the power" on line 3, has been changed to "a power".

In claim 4, the recitation of "the power" on line 3, has been changed to "a power".

In claim 7, the recitation of "the power" on line 3, has been changed to "a power".

***Allowable Subject Matter***

2. **Claims 1 – 9 are allowed.** The following is an examiner's statement of reasons for allowance:

Regarding to the claimed invention, the prior art of record fails to show or render obvious of a method and its corresponding apparatus for performing circular group-wise parallel interference cancellation in CDMA system, comprising:

A rank part for receiving a soft bit decision value of a maximal ratio combiner of each detector a power estimation value of a received signal generated by each finger of each detector, and determine the rank of the received signal of each path; and

A finger selector for receiving a rank decision signal generate by the rank decision part, and outputting a signal for selecting a predetermined number of fingers,

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wherein the fingers selected by the finger selector generate and output baseband signals of the received signal on the corresponding path, and the baseband signals generated from the selected fingers are added to obtain a sum value of the baseband signals, the sum value is subtracted from the received signal to perform the group-wise interference cancellation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim et al. (US patent # 6,741,634 B1) discloses an apparatus and its corresponding method of adaptive weighted parallel interference cancellation for CDMA system.

Shan et al. (US patent # 6,728,324 B1) discloses an apparatus and its corresponding method for multi-path signal compensation in spread-spectrum communication systems.

Sugimoto et al. (US patent # 6,661,835 B1) discloses a receiving device and channel estimator for use in a CDMA communication system.

Naito (US patent # 6,553,058 B1) discloses a multi-user parallel interface canceller apparatus.

Wang et al. (US patent # 6,501,788 B1) discloses an apparatus and its corresponding method for interference cancellation in spread-spectrum communication systems.

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Shimizu et al. (US patent # 6,496,534 B1) discloses a CDMA receiver with weighted interference cancellation.

Kim et al. (US patent # 6,473,415 B1) discloses an interference canceling method and its corresponding apparatus of a multi-mode subtraction type in asynchronous multi-path channels of CDMA system.

Kim et al. (US patent # 6,067,333) discloses an adaptive serial and parallel mixed interference cancellation method.

Suzuki (US patent # 5,953,369) discloses a DS-CDMA. Receiver with multi-stage serial interference cancellers using power level information appended to data blocks.

***Contact Information***


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (571) 272-3010. The examiner can normally be reached on Monday through Friday from 8:00 AM to 17:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (571) 272-3021. The fax phone numbers for this group is (571) 273-3021.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

DXN

October 01, 2004

  
STEPHEN CHIN  
SUPERVISORY PATENT EXAMINE  
TECHNOLOGY CENTER 2800